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MyRun: Balancing Design for Reflection, Recounting and Openness in a Museum-based Participatory Platform

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ABSTRACT

Cultural organisations are increasingly looking towards using digital technologies to supplement, augment and extend visitors' experiences of exhibits and museums. In this paper, we describe the design and evaluation of *MyRun*, a 'participatory platform' for a museum. Our goal with *MyRun* was to use experience-centered design principles of reflecting, recounting and openness as a basis for engaging visitors in sharing stories about experiences related to a nationally significant cultural event. We undertook a qualitative evaluation of the system based upon observations of its use, the contributions visitors made to the platform, and interviews with 10 visitors. We discuss how visitors approached *MyRun*, contributed and browsed stories, and the challenges associated with the expectations visitors and curators placed on cultural exhibits. We close by identifying a series of design opportunities for future participatory platforms in museum settings.

Categories and Subject Descriptors

Information interfaces and presentation

Keywords

Experience-centered design; participatory platforms; museums; openness; curation.

1. INTRODUCTION

Museums and exhibitions are a dynamic context within which to explore how technology can enhance and enrich visitor experiences. This has not gone unnoticed by the HCI community, and prior work has explored a myriad of issues such as: the use of mobile technologies as a way of receiving information about exhibits [15] and sharing museum experiences with others [27, 8]; the application of tangible and multi-modal interfaces in exhibits [26, 9]; the 'assembly' of multiple interrelating technologies to



Figure 1. The *MyRun* participatory platform in the museum.

provide narratives [10, 20]; and the opportunities technologies provide to orchestrate and inhibit social interaction [17], support multiple levels of engagement [7], and bring online and offline visitors together [5] within museum environments. In recent years, there has also been a concerted effort within the museum and cultural heritage sectors to create what Simon terms 'participatory platforms' [24]. This is part of a shift from seeing visitors as consumers of highly curated exhibits to their co-constructors by contributing their own experiences, content and media [24]. Prior work in this area has explored the ways in which user-generated content [11] and social media [1, 14, 22] can be brought into the museum, or facilitate visitors and passers-by to contribute to ever-changing exhibits [7]. It has been argued that institutions embracing participatory platforms and their associated philosophy re-model the museum as 'relevant, multi-vocal and responsive community spaces.' [24, p.5].

We describe the design and evaluation of one such participatory platform—*MyRun* (Figure 1). *MyRun* was designed specifically for a 3-month exhibition celebrating the 30th anniversary of a famous half-marathon held annually in the United Kingdom called The Run. This celebration offered a rich opportunity to explore and reflect upon the role of participatory platforms in museums. As a highly publicized anniversary of a nationally significant event, there was a large amount of public awareness of this year's run. Furthermore, as an event with a history within living memory, annually reoccurring both in the past and into the future, it supports the notion of a 'living archive', an 'ongoing, never-completed project' [16, p.89]. As such, it offered a supportive setting for exploring the potential of participatory platforms and

seeing the public as co-constructors of exhibition content and cultural heritage.

A further goal in designing MyRun was to explore experience-centred design sensibilities, with its emphasis on ‘lived and felt life’ and active participation [28, p.13]. We focused on designing to invite visitors to *reflect* on The Run, to *recount* stories associated with The Run, and to allow for *openness* in expressing feelings and memories of The Run. We describe how these experience-centered sensitivities were incorporated into the design of MyRun. We then describe our evaluation of MyRun based upon an analysis of triangulated data from observational fieldwork, video recordings, interviews with visitors and their contributions to the system. We conclude by contributing insights related to designing for reflection and recounting in museums through the overarching principle of openness, and examine the tensions such openness raises for the curation of data on future participatory platforms.

2. OUR DESIGN APPROACH

We adopted an experience-centered approach [19, 28] to designing the MyRun platform. This involved collaborating with curators and staff from our partners at The Museum, a group of 9 runners whom had participated in each of The Runs held over the previous 29 years, as well as the event organizers of The Run. In the following, we briefly introduce the background of our work, our initial sensitization to experiences surrounding The Run, and the core experience-centered design criteria developed for MyRun based upon initial exploratory work and a review of existing literature on technology in museums.

2.1 The Run and The Museum

The Run is an international half marathon established in 1981. The run itself is 13 miles long, following a route from the city centre to the coast, along which runners take in a number of iconic and dramatic landmarks. When the run started it attracted 12,000 runners, but by 2010 this had increased to 40,000 (it received 54,000 applications). The event is open to runners with a range of abilities, from world-class athletes and celebrities to novice runners and those who just walk or wear costumes to raise money for charity. It is a significant cultural event in the UK, with live national television coverage of the day, and brings a large amount of tourism and trade to the region.

In 2010, we collaborated with The Museum to create a 3-month exhibition to celebrate 30 years of The Run. The aim of the exhibition was to reflect different perspectives and experiences of participating in The Run. The exhibition was being curated to incorporate a range of physical artefacts and memorabilia, such as books, t-shirts and medals, collated from institutional, community and family archives. The exhibition was curated around themes related to the social history of The Run as an event within living memory. As such, the exhibition was intended to be qualitatively different to the museum’s primarily natural history and antiquities based collection. This offered an opportunity to explore new modalities of visitor engagement and expand upon their existing provision of social media by linking visitors at the museum and online contributors.

2.2 Sensitizing activities

Our design process began by working with staff from The Museum to collate existing written testimonies, books and artefacts that had been collected through the museum’s archive service. Discussions of these materials structured initial meetings

with the curators of the exhibition, acting as experiential and visual references to start generating ideas about the design of the platform.

To supplement our idea exploration with The Museum, we also approached a group of runners who had competed in every run since 1981 to participate in our initial research. We performed semi-structured interviews with 9 of these runners. This provided additional insight on how The Run had changed over the years for those who participated, along with allowing us to collect further visual material from these participants to inspire the design of the platform.

In the 3-months prior to the exhibit opening, we met with the museum staff on a weekly basis. We moved from initial very open and divergent discussions, to the insights from the runners’ interviews and then converging to ideas that were realistic given the short timeframe of implementation and ‘specificity’ [12] of the wider exhibition. Alongside these meetings, we continued to review existing work to identify best practice surrounding the use of technology in participatory museum environments. From this process we identified criteria that our design work oriented around. We will discuss these criteria, and how they were embodied in the final design, below.

2.3 MyRun: Design and its criteria

The final design of MyRun consisted of 13 single touch touchscreens (one for each ‘mile’ of The Run’s route) placed along the length of a 9m-long curved table (Figures 1 and 2). 9 of the screens had associated Anoto digital pens and paper note pads. The screens displayed stories, photographs and drawings from runners and visitors plus an invitation for people to write or draw their own story on the pads. These invitations took the form of questions, which were printed as part of the design on the physical table and on each screen. On returning the pen to a docking station the contributions were uploaded to a local server and displayed on the associated screen. This also produced a number that could then be used to recall the entry via numerical key-pads linked to two large display screens located on a wall next to the table. In addition to the systems deployed in the museum, visitors could also view and submit their own contribution at home online. In the following we discuss our 5 design criteria and how they were incorporated into this final MyRun design.

i) Provoking curiosity and subsequent reflection on The Run: Prior work has highlighted that in order to facilitate contributions in public settings, it is crucial to initially provoke curiosity around an exhibit [24] and entice interaction [4]. As such, from an early stage it was discussed by the team that MyRun required pre-seeded content to ensure there was always quality curated content, to provide triggers for reflection and examples of the kinds of contribution we hoped people would provide [24].

Our initial interviews with runners offered experiences related to The Run and so we worked with them to represent 13 stories. We condensed excerpts of their interviews into small textual snippets, which highlighted different aspects of their experiences across the geography of the route and across time. These stories (Figure 3) were displayed on a series of single-touch touch screens that were built into the tabletop of the exhibit. It was clear that the geography of the route was laden with memorable events that the runners wished to share. As a result, the tabletop was also designed to represent The Run’s route, with notable sites, roads and distance markers visualized graphically. The screens were evenly distributed across the tabletop and associated with specific

locations across the route. The single-touch screens displayed three stories at a time related to that physical location, which visitors could scroll left and right and buttons on the screen enabled rotating of content so it could be viewed from either side.

ii) *Familiar technologies to support recounting stories:* Brignall and Rogers [4] highlight the importance of providing familiar forms of interaction in order to support engagement with technology in public spaces. We therefore chose technologies that were familiar to the staff at The Museum and would also offer familiar affordances to many visitors. As noted, single-touch touch screens were chosen as the primary way in which visitors could interact with the pre-seeded content. These, however, would have been slow for visitors to input text with and inhibit the contribution of stories. So visitors could easily contribute content we incorporated Anoto pen technology, which combines a physical pen with the capacity for creating a digital copy of written content. By using this technology we hoped to provide an invitation to making a ‘supplementary contribution’ [24], adding to the existing pre-seeded content by using the pens and their familiar affordances.

iii) *Balancing openness and inspiration to support expressing feelings and memories related to The Run:* The Anoto pens were also chosen as they would provide a degree of openness [23] to how visitors might contribute their stories. On the tabletops we provided explicit written instructions to take participants through the process of contributing. In addition, instructions on the screens were activated when the pens were picked up and docked. Alongside the pens, we placed two different pads of Anoto paper that asked visitors to share written stories and pictures related to their experiences of The Run. One pad had an open space at the top, which asked people to tell or draw their story (Figure 4). We designed these to be open and playful in order to free up the contribution space for participants. The open nature of the pads was bracketed by asking more specific questions about location, year, age of participant and ways people were involved in the run. This was included to provide guidance and encourage reflection on their own personal histories as they relate to The Run. The second pad was targeted towards children and those who had not necessarily been involved in the run. This invited people to draw a running costume onto an outline figure of a person (Figure 4-right) which was then transferred onto a running avatar on the screens.

Invitations to write or draw something on the pads were further supported by printed questions on the table, such as: ‘How does it feel at the start?’, ‘How does it feel to watch?’, ‘What’s your favourite part of the run?’, ‘What is the most difficult part of the run?’, ‘What does the run smell like?’, and ‘Where did you go for a pee?’. These questions were integrated to provide multiple forms of inspiration for the recounting of stories through reflecting on emotions and actions across points in its route.

iv) *Supporting social interaction and multiple users at once:*

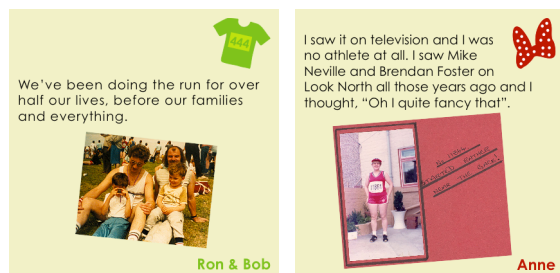


Figure 3. Examples of the pre-seeded content.

Another core criteria identified in prior work [17] and crucial to The Museum staff was providing opportunities for social interaction around the exhibit. Horizontal mounting of screens was chosen as it supports group congregation and engagement [21] but also so that people interacting with different screens would be able to talk to one-another (Figure 4). This also meant MyRun supported ‘multi-user’ design [2], with multiple people collaboratively engaging with it at any one time rather than having many replicated single units with the same content.

We also aimed to support socialization between visitors by providing two large display screens at the rear of the table (as seen in the background of Figure 1). These screens presented a different visualization of content than on the single-touch screens to draw people in [4], foster awareness of the kinds of content that could be added [25] and provide opportunities for collective discussion of content. A key-pad retrieval system for the large display screens was integrated to specifically support the sociable sharing of a newly contributed story amongst a group of visitors. Finally, the website was intended to support the sharing of stories at home after visiting the exhibit, with contributions appearing there as well.

v) *Balancing integration with the exhibition with distinguishing visitor contributions:* Finally, the platform had to be integrated into the narrative of the wider exhibition and conform to its visual identity. The physical form and the graphics for the platform were developed between the curators, exhibition designers and our research team. This meant MyRun shared the graphical and physical motifs used in the overall exhibition, creating a seamless interweaving [6] between it and the other exhibits. Some contrast with other exhibits was necessary, however, to visually distinguish visitor-contributed content from heavily curated content. As such, it was envisaged that the pens would give a handwritten quality to the visitor-generated contributions, contrasting with the pre-seeded content from the interviews and curated content elsewhere.

To provide additional means of curation at the museum’s request we also developed an online editing interface, which monitored content as it came in via a remote login. This provided museum staff access to remove content which was perceived to be inappropriate. It also provided additional means to curate what was included on the screens. A balance was struck here between the need for visitors to have instant feedback and recognition for their contribution [24], but also for the museum to have some curatorial control. The solution to this was to create a stepped system that made all contributions automatically available in the museum. If museum staff accepted the contribution it appeared online as well as in the museum. If they rejected the contribution it was removed from the museum displays and online at the same time. Initially this was done once a week, for the first couple of weeks. But on realizing the amount of content that was being generated, staff vetted once a morning before the museum opened.

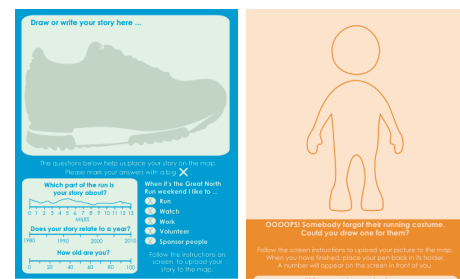


Figure 4. Examples of the paper pads

3. DEPLOYMENT AND STUDY

MyRun was deployed as part of the 30 Years of The Run exhibition in 2010 for its full-duration of 93 days. During the first week of the exhibition we spent 30 hours observing visitors interacting with the platform and talked to museum staff about its use. This was followed by 20 semi-structured interviews with visitors. These were primarily used to identify usability issues around the platform. From these we iterated the design of the touch-screen interface to make the process of contribution in the museum clearer.

Following this, we conducted further observations and undertook video recordings of visitors interacting with MyRun. We also performed 10 semi-structured interviews with visitors about their experiences of The Run, the exhibit and the website. Each participant was asked to describe their experiences of The Run, followed by a visit to the exhibition, the platform and then the website. This approach was employed to consider how visitors experienced the exhibition, the platform and website holistically and chronologically in relation to their individual experiences. These interviews lasted between 60 and 90 minutes, and were audio recorded and transcribed for later analysis.

We also collected use data related to visitor contributions to the exhibit at the museum and through the website. Over the 3-month installation we received 12,940 contributions. However, during the deployment only 8% of these contributions were accepted—a quarter of which were handwritten comments, the other three quarters were drawn contributions. Reasons the museum staff gave for not displaying comments included: offensive comments, scribbles, irrelevant to the theme, relevant to the theme but on the wrong paper (written contribution on drawn character or vice versa), and repetition of the same content due to system errors. We discuss the implications of this in our findings. Furthermore, only 53 contributions were made via the website, albeit these were typically three to four times the length of those written by hand. All contributions were transcribed and collated for analysis.

The interviews, field notes and visitor contributions were taken as a corpus of data on which an inductive thematic analysis [3] was performed in 2011 when the exhibition had finished. Data was summarized with one or two-word codes at the sentence to paragraph level. These codes were grouped into four overriding themes. Excerpts of data were then identified that illustrate each theme, described in the following.

4. FINDINGS

Four themes structure the following account: i) *initial expectations*; ii) *contributing content*; iii) *just browsing not contributing*, and iv) *institutional expectations*.

4.1 Initial expectations: curiosity and breakdowns

Upon entering the exhibit room, visitors were confronted with the large tabletop of MyRun that was centrally positioned and wrapped its way around other exhibits. It was hard not to notice the exhibit, and indeed we observed only a few occasions where visitors did not at least walk up to and read the content of the exhibit. The platform shape, design and technology provided points of intrigue and curiosity, which visitors described as creating an impetus to look, touch and try out. Several visitors specifically identified the Anoto pens as an “*intriguing*” aspect of the exhibition design, speculating what their use might be and how it worked. One visitor, Louise, approached the tabletop and

A photograph of a yellow sticky note with handwritten text in black ink. The text reads: "1982 I gave up Smoking and entered the Run. I am 68 and have not smoo for 28 years. Thanks Larry."

Figure 5. Larry’s contribution highlighting the impact the run had on his personal health. Contribution reads “1982 I gave up smoking and entered the Run. I am 68 and have not smoked for 28 years. Thanks Larry.”

immediately linked the affordances of the pens with the handwritten contributions on the screen: “*you write your story and then it’s up on there* [points to large display screen].” Louise speculated how the technology itself worked, but intuitively formed a link between picking up the pen, writing on the nearby paper pads, and the story then appearing on the screens behind. For others, while the pens and touch-screen invoked curiosity, a lack of experience of these technologies meant they initially struggled to use them. We repeatedly observed visitors pick up the pens and then look around and talk to friends to see what to do with them. In one example, Larry thought it was a stylus so wrote on the screen. Even after a reassuring discussion with museum staff on how to use the device he was still concerned about getting it to work correctly:

“[I was] getting panicky because I can’t work the machine and that effects what you write, at least when I think about it [...] once you get the pen in your hand you think, I’ve got to write something here and I wrote 1981 and I meant to put 1982, you could alter it, you could put a line through it but I’m not sure if there was any way of rubbing it out, once you start.” – Larry

The technology became the central feature of Larry’s interaction with MyRun, sometimes to the detriment of the content. After initial experimentation with the pen, however, he felt much more comfortable with the device: “*once I was writing it was easy because I felt like I was in control*” (Larry). Other visitors however did not persevere having experienced similar initial confusion:

“A lot of people are like that, they’re dreadfully insecure about doing something wrong in a museum and getting told off for it. And I thought ‘Mmm ... I’d rather not’.” – Jean

We also observed challenges related to the expectations visitors had of computers as a result of their use of them in their daily life. Most visitors recognized the exhibit as a “*computer system*”, yet one that did not convey the interaction attributes they anticipated:

“There didn’t seem to be a menu, a set of instructions. If in doubt start here, a homepage, something of that sort. Perhaps that was deliberate, but I found that confusing. I quite like a Start Here or a Help button.” – Simon

For Simon, his expectations of how to interact with technology in a museum space were not met. His experience highlights a ‘breakdown’ [27] between the expected experience and the actual experience. While this can sometimes prompt curiosity and inquiry and lead to more playful interactions, in this instance, such a breakdown prevented Simon having any further sustained engagement with the platform.

Breakdowns were also experienced by those visitors who approached the large displays first rather than the tabletop. Jean, who had participated in several runs, explained how she approached the screen and saw: “*all of the stories and the number pad [...] I thought 'Oh maybe I'll just put in my bib number and see what happens!' So I did that. Obviously nothing*”. Eileen was another ‘runner’ visitor who entered in her ‘bib’ number into the display: “*it was pictures and it was things that, people commenting about the Junior run, so I don't know how relevant it was.*” For both Eileen and Jean, they had mapped the invitation to enter ‘Your Number’ into the system to their experiences of The Run where they are given a ‘bib’ number to wear on their shirts. In one case nothing happened, and in the other content that was unrelated to that individual appeared. In both instances, there was clearly a breakdown between holistic experiences of The Run to those who had participated, and MyRun as a self-contained exhibit representing these experiences of The Run.

4.2 Contributing content: expressing and dialoguing

As noted, over the course of the deployment nearly 13,000 contributions were made to the MyRun exhibit. We noted a plurality of motivations that individual and groups of visitors had to contribute their stories. For some, the exhibit provided a rare opportunity to reflect upon their personal experiences of The Run. This was particularly relevant for those who had participated in multiple runs in the past. In one such instance, Larry reminisced about his motivations for starting to exercise. During his visit to the exhibition he reflected further upon how his participation in The Run had positively impacted on his health, leading to his contribution: “*1981 I gave up smoking and entered the run. I am 68 and have not smoked for 28 years.*” (Larry, written contribution) (Figure 5). In discussing his contribution, Larry stated that while he was grateful to others for giving him the opportunity to be part of The Run, contributing was for his own personal benefit, rather than to share with others:

“I don't think it was to write it down for other people, it was to write it down for me. [...] I think writing is more forceful than talking, because when you've written it you can re-read it, but when you're talking you don't know what you've just said. You imagine what you said.” - Larry

Larry draws attention to the value of writing as a medium of expression. It helped him make sense of his thoughts, and located how The Run played such a significant part in his new, appreciably healthier, lifestyle. He noted how: “*I think when you write, you've got to be more concise*”. The handwritten messages were also highly valued by other visitors, who felt they conveyed more information about the writer than typed messages: “*You can sort of tell a bit more can't you?*” (Helen); “*Because from like that one [points at screen] you can gather that it's a kid.*” (Jill).

Another motivation for contributing a story was to support or contrast with contributions others had already made. For example, one of the pre-seeded stories explained how local people helped runners cool down during a heatwave. Jenny sympathized, explaining that when taking part in The Run she felt “*quite grateful*” for support from the crowd:

“It's quite nice 'cause you've got little random stories, like one guy had put that some woman gave him an ice lolly and stuff [...] I think you can kind of identify with that 'cause, it is like little things that... make you keep going...” - Jenny

Her subsequent contribution explained how “*the audiences all coming out with their hoses when it was a heat wave*”. She explained how it was “*nice to write it down*” to show her appreciation to those who helped with her run. Jenny’s motivation to contribute was also a response to what she perceived to be “*stupid messages*” left on the system, mostly by children. She said seeing messages that were irrelevant made her “*more want to do it*” because she had an “*actual experience*” to add. For Jenny, the value of the platform was that: “*you see other people's little tiny moments of their experience [...] the fact that you can flick through it all easily. You can look at quite a lot of stories.*” Her motivation to contribute was as much a personal motivation to ensure there were more “*real*” stories that were visible and acknowledged.

In Jenny’s case, she was concerned with the quality of the content being presented on MyRun. In other cases, we saw a small number of visitors disagreeing with portrayals of The Run in stories, or what they believed to be factual inaccuracies. While some visitors did find certain contributions challenging to agree with, there was also a sense of appreciation of the diversity of accounts shared through the exhibit. Peter explained:

“... they were quite nice, they are reminding you of your own little feelings of it. And you also get a reminder of the breadth of the types of people running it.” - Peter

Peter’s description of his experience with the platform points to the value and pleasure of both recognizing and acknowledging shared emotions associated with the run. He reflected on how he would not contribute similar content as some of the others had done but valued the diversity of people involved with the run and their contributions. When appropriated in this way the platform became a means for participants to have a dialogue with one another, through the contributions and through the platform.



Figure 6. A diverse range of people contributed content from experienced runners who had completed most of the runs to groups visiting the exhibition who just wanted to have a go.

The multiple touch-screens, display screens and shape of the tabletop further supported social interaction between visitors when browsing content. Visitors stood opposite and next to one another to discuss contributions they were looking at and contributions they were making (see Figure 6.). The large display screens also initially drew visitors in to make a contribution through encouraging discussion. If visitors came as a group, they would often use the large display screen to share content between one another. In one observed example, Helen and Jill approached the

screen first, before Helen moved towards the touch screens (Figure 7). Helen initially called Jill over to the large display screens and they discussed the contributions. They laughed and described the “cute” and “personal” stories, such as “Mum ran slowly”, “My uncle’s run twenty nine runs” and described why they wanted to contribute:

J: “It’s a nice way to write down your own little message, about what it meant to you.”

H: “yeah, and I think maybe you’d wanna do it more if you were there with someone else, than on your own [...] Although I suppose the fact that you put it onto the screen and then it joins everyone else’s, maybe it means that it won’t matter if you’re on your own.”



Figure 7. Helen and Jill, sharing pre-submitted contributions on the large display screens (top) followed by writing their own contribution on the pad on the tables (bottom).

While both Helen and Jill were encouraged to contribute their own stories as a result of seeing contributions of others, they also expressed that sharing these experiences *together* during their visit encouraged them to engage more proactively with MyRun. They highlighted the significance of sociality and group dynamics in facilitating engagement with the interactive exhibit. Similarly, participants who visited the exhibit on their own often speculated whether their lack of interest in some elements of the exhibit was a result of a lack of sociality with others:

“If I’d been here with [her partner] [...] or with any of the other people that I run with for that charity I think we’d have probably had a much more interactive experience. Not just with the technology but with each other.” – Geraldine

4.3 Just browsing, not contributing

While many visitors contributed stories, it was also clear that a great many also preferred to just browse MyRun’s content. This involved some looking and activating stories on all the screens and moving around the entire length of the table. Some read and laughed at the questions on the outside of the table. Others viewed and discussed content on the large display screens, and some just scribbled with the pen to see how the technology worked. Many of the visitors interviewed explained how they took great pleasure in just reading stories, and how this made them reflect on their own future participation in The Run:

“Seeing people’s stories and things you can sort of relate to it and identify with what they’ve said [...] people talk about they’ve enjoyed it and, the support they get from the crowds and everything else [...] it makes you think, ‘Oh I might do it again’. ‘Cause I’ve, recently the last few years thought ‘Oh no I’ve done it for a few times now’ and there’s lots of other thing, races and half marathons or whatever you can do. But then you look at things like that and think ‘Well no I could do it one more time!’” – Dorothy

During interviews, it became clear that for some visitors there were concerns over publically sharing stories with others. Some concerns were raised about being identified in the stories by other visitors. While personally identifiable data is never requested by MyRun, it was clear that some visitors felt that you could unwittingly identify yourself in the stories you tell. Eliza was particularly concerned about being publicly “seen” by other visitors when submitting a story: “If I were to give a comment I’d put it in like a ballot box” (Eliza). Further in the interview she revealed how she was mostly concerned people would not be interested in her stories, as her involvement in The Run had been minimal: “These are people that have been doing it for years and years and they’ve got like, proper big stories.” (Eliza). As such, she preferred to just look at the stories of others.

While many visitors browsed and looked when visiting the MyRun exhibition in person, these instances were typically transient and not sustained for substantial lengths of time. However, during interviews it became clear that the website provided an excellent means for visitors to “study” other peoples’ stories in detail. Dorothy explained how she enjoyed systematically going through each photograph and story in detail on the website to try and identify the people who had shared them, or to find herself in some of the user-uploaded photographs (see Figure 8). for example of story contribution). The photographs were particularly evocative for Dorothy, and for her highlighted the huge benefits of using the website over the MyRun exhibit at The Museum, which did not allow viewing of user-uploaded pictures. These benefits of using the website over the main exhibit were echoed by Eliza who, as we noted previously, had a preference for reading over contributing. The website afforded her opportunities to read the pre-seeded content in more detail: “I was picking these ones I thought were good, cause they were quite detailed and quite interesting to see people who’ve done it over all the years” (Eliza). She described the website as being important for her understanding of the value of the platform, since she felt too “shy” to contribute something herself, preferring to read about other people’s experiences instead.

Although the website was also designed to encourage the general public to enter stories, it was clear that its visitors primarily used it to browse content much like Dorothy and Eliza had. This was not necessarily a result of an unwillingness or fear to contribute.

Catherine explained how when browsing the website she did not contribute a story as it had never occurred to her that she should do so: *"I think just 'cause in the actual place you're kind of in the atmosphere of it [...] it feels more current [...] to write your story"*. Browsing the website, decontextualized from the rest of the exhibit, removed a lot of the impetus for visitors to engage with the participatory aspects of the MyRun platform. Helen and Jill explained how they tried to use the website to submit a story, but felt that they lost the feeling of being in *"the moment"* that was achieved when visiting in person.

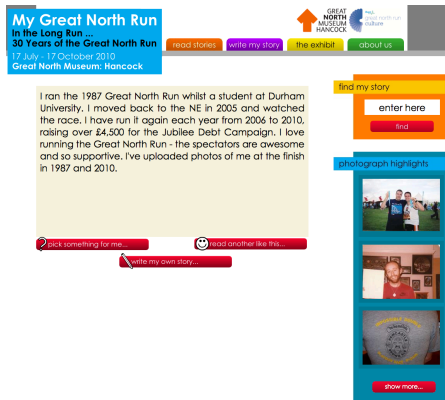


Figure 8. Example of web page contribution viewed online.

4.4 Institutional expectations: openness and quality

One of the core values designed into MyRun was the notion of openness in how visitors could contribute stories and experiences to the system. While visitors would be limited to handwriting, drawing, and in the case of the website typed text, there were no 'rules' or explicit direction in regards to what correct or incorrect content looked like. This, expectedly, meant that at some times visitor-contributed content on the system did not explicitly relate to the topic of The Run. This was particularly the case when a large number of children visited the Museum, and had engaged *en masse* with MyRun and submitted drawings or one or two words just to play with the technology. This impacted upon visitors' perception of the MyRun exhibit:

"It seemed more like kids stuff [...] when you first look at it, it looks like it's just... little, kind of drawings of people have drawn like match stick things that then you think 'Oh well maybe that's just, more something for, um, kids to keep them occupied'." - Emily

A number of other visitors commented that they saw MyRun mostly as a form of *"children's entertainment"*. While this was in part a result of the systems openness and the large amount of *"nonsensical"* content, there was also a sense that MyRun was seen as less intellectual compared to the other exhibits. Shaun explained how he felt that museum exhibits should have some form of *"scholarly underpin"*. He explained how he very much enjoyed the rest of the exhibition, which he felt was an improvement over the traditional exhibits displayed at The Museum. He spent considerable time looking at the exhibits on the science of running shoes and sports clothes. He was also completely drawn in by an exhibit that explained how a famous British paralympian's wheelchair worked, exclaiming that *"the gears on her wheelchair are the same as those on my bike!"*. Yet he failed to see what *"the point of the interactive exhibit was"*:

"I wanted to know what the content was and what the material was and what the learning was, if you like. [...] having spent a few seconds, not getting to that, I couldn't be bothered to look any further." - Shaun

Shaun was surprised to learn that the platform contained stories of members of the public that had participated in all of The Run's over the last 30 years. He explained how that *"was not obvious to me"*, and that if he had known that perhaps he would have engaged more with the exhibit. In many respects, Shaun's lack of engagement was an initial reaction to something that he saw as not in-keeping with his expectations of The Museum as an educational institution. These views were echoed by another participant, who thought MyRun was: *"more [for] just like, feedback and comments at the end"* (Edward) rather than an open archive of people's experiences of The Run.

The large number of seemingly irrelevant contributions also caused problems for The Museum staff and curators who were managing the platform during the deployment. The 6000 contributions received in the first month were far beyond what was initially anticipated. That much of this content was not explicitly linked to the running theme challenged the museum staff to know what to do with it and how to make sense of it. As noted, a monumentally large number of the submissions were deleted over time, and it became clear that the staff and curators at the museum were vetting contributions not just on their inappropriateness but also their significance. The introduction of a vetting procedure had considerable impact on the dynamic of MyRun. Recurring visitors noted how contributions they had made at one point in time were no longer accessible when they entered their numbers into the public display or on the website. Larry, whose initial problems transformed into great enthusiasm for the exhibit, felt that overtly strong curation contradicted the point of the exhibition:

*"It's a difficult thing to vet things isn't it [...] let's be interactive, but we're only going to put things on that we think is alright. If someone writes, 'My mum is doing the Great North Run' which is b***** all, and that person goes to look at it, and it's not there, what right have you got to say [that's not allowed]? If you ask people to write, you should really put on what they write unless it's an attack. I mean if somebody wrote down I think this is a complete waste of time and a waste of money you should put that on!"* - Larry

As such, the vetting of contributions raised questions as to what The Museum was trying to achieve by placing greater control over what could be displayed or not. Furthermore, for those whose contributions had not appeared on the system, or had been deleted following vetting, the recognition of their input was no longer apparent and seemingly not appreciated—which, from the museum staff's point of view, they often weren't.

5. DISCUSSION

In designing MyRun, we aimed to provide a means for visitors to The Museum to reflect on their own personal experiences of The Run and express these by recounting them in stories shared through the platform. Rather than prescribing what should or should not be shared, or explaining precisely how a story be formed, we attempted to support openness through first engaging with the relevant stakeholders, museum staff, runners and event organisers. This was to initially gain insights into how such a participatory live event, that had a substantial history and potential future, might also support participatory digital platforms within

the museum. In particular our emphasis was to consider and design for the ways in which such stories might be expressed. Our findings highlight a number of successes and critical failures in our initial motivations. We reflect on these challenges and opportunities here, focusing on the tensions of designing with multiple stakeholders in mind when designing for openness, and the challenges of curation in developing and using participatory platforms as it relates to the expectations placed by, and onto, cultural organisations.

5.1 Reflections on designing for openness and specificity

One of our core guiding principles for supporting the sharing of stories was to design around openness. Such openness was structured around three main commitments; openness to collaborate with multiple stakeholders as part of the design process, openness to make space for multiple kinds of voices to be presented within the museum and an openness for others to hear and interpret such voices as they were presented as part of the exhibition [19, 24, 28]. While these commitments initially appeared to speak to a design that could potentially foster dialogue and expression within the museum, there were also significant constraints placed on how visitors and curators could and were making sense and meaning of the platform that affected both the production of content and subsequent interaction with it.

Those constraints initially came in the form of the particular theme of the exhibition, the museum as an institution itself, and the particular combination of technology we chose to use. The Run provided a frame of reference that helped to focus the design and communicate how visitors might orient themselves towards the space. That the interaction occurred in The Museum further structured visitors' understanding of and appropriation of the platform and how to make sense of it. The technology—the pen and touch-screens—further specified the invitation to take part, communicating what the platform was about and showing the potential of how it could be used.

Further constraints were refined as we started to collaborate with the stakeholders, museum staff, event organisers and previous runners. The camaraderie of the carnival atmosphere of the run, the embracing of different kinds and qualities of mass participation and the marking of time that each yearly run and live events created for runners were all significant elements that were brought into the design process when attending meetings and iteratively developing and presenting ideas within the team.

The questions that were asked on the notepads and on the table itself were further designed to suggest possible ideas and directions for the kinds of both incidental and hedonic experiences runners had described to us when discussing the run. Despite this close connection to these more emergent and localised constraints in relation to the theme, which we designed into the system, the diverse contributions we received suggest many people responded more openly to the invitation. This included ways that the museum staff and many visitors did not appreciate as relevant such as more playful scribbling experimentation with the technology and comments that did not connect with the running theme. This therefore also created tensions for what museum staff and some visitors expected, when it was used so extensively with a range of different audiences and for a range of different purposes within the museum.

Sengers and Gaver [23] highlight how openness supports individual interpretation and can be supported through ambiguity

around the use context. Ambiguity, it is argued, challenges users to question the assumptions of what technology is and how we can personally relate to it [13]. More recently however Gaver et al [12] described the inevitability of a balance between 'openness for interpretation' and the constraints of the specific situation that technology is used in. The situation within which interaction takes place therefore provides a context or theme to frame what the interaction might be 'about' and which 'communities' are being spoken to [12].

The openness of MyRun was still evident however in the simple invitation of asking visitors to recount a 'story' in a museum. While such a request was focused on the theme, it created some ambiguity of what people felt actually constituted a *relevant* story, led to great diversity in vernacular perspectives of the run shared through the platform, therefore avoiding a singular representation of what the run meant to visitors. At the same time, those contributing became part of the community and common experiences built up around the run. We chose to program the technology, so it selected content to display on the screens at random avoiding a rational retrieval of information. For some this was confusing and for some gave a sense of what it often felt like to participate in the run. Our participants described making sense of this ambiguity often as both an internal and external dialogue activated through the platform in relation to somebody who they imagined would want to hear and value what they had to say. This dialogue often came in the form of questions about whether writing a story was a suitable activity for them to do and how the theme and the act of contribution was personally meaningful for them, if the museum was a suitable place for writing it, and whether their stories were significant enough to share. For some of our participants this created a frustrating experience that wasn't valued, and for some this triggered a meaningful reflection on, recollection of and connection to the experience of the run itself.

The majority of submissions however were unrelated to the theme and indicated that most visitors who contributed found it more meaningful to just play with the platform. As noted in the findings, these contributions were eventually rejected and therefore effectively rendered meaningless within the context of a curated exhibition. In the design we had attempted to contextualise the open nature of the invitation for visitor contributions providing question prompts on the table, tangible markers from the route of the run, examples of pre-seeded content on the touch screens and the wall displays, and specific questions about people's involvement on the paper pads. These were designed to provide multiple points of inspiration rather than asking people to contribute to a set of questions in a formulaic way.

In interviews visitors articulated their response to design features through both ambient and explicit acknowledgment of them, so it is difficult to disentangle particular features from the overall platform and their effectiveness in supporting contributions. Visitors did however consistently respond to the pen and the hand drawn content as an open invitation to contribute or as something that they recognised wasn't for them. This highlighted the open invitation to *add something* was recognised before visitors had often thought about what it was they wanted to add. The familiar interaction of the pen provided a clear invitation that didn't necessarily encourage reflection on the theme, but a reflection on what was personally meaningful for them at that moment in time.

Our findings suggest valuable considerations for designing for openness for participatory platforms in museums and cultural contexts, especially when supporting reflection and recounting of

personal experiences in *allowing time for appropriation* if asking such open questions at scale. In prior work research that has supported ambiguity and appropriation, artefacts have been used repeatedly over long periods of time, typically deployed in a person's home (e.g. [12, 23]) or for a small group of people. In the museum, however we recognised there would potentially not be extended and repeated periods of use by the same groups of people. We therefore built familiar physical interaction around opportunities to socialise so people could understand and work with the platform immediately and reduce their barriers to participation. But as we saw, this familiarity and the number of pens encouraged a lot of content that was eventually rejected.

Future research for digital platforms could potentially account for such diversity by designing *for* this particular kind of tension, while being mindful of the contradictions that might arise. While designing for a balance between openness and specificity is one such approach, working productively with *multiple possibilities for openness* to encourage appropriation and emergence while also supporting curated experiences that require *specific qualities* of participation. This could include designing for different visitor paces and journeys through the platform and types of contribution distributed across the space of an exhibition connecting to online and mobile experiences. Working more closely with exhibition designers, curators and visitors to consider the kinds of spaces that could support different processes of contribution around a theme could further support coherence to distributed content.

5.2 The challenge of participation and curation

Our deployment of MyRun also raised significant challenges in how museums and cultural organisations deal with public mass-participation and co-construction of exhibition content. Simon [24] highlights that a huge challenge to participatory platforms in cultural organisations is to overcome the concerns of staff that visitor contributions might be offensive or, more subtly, inappropriate or inaccurate. In the case of contributory projects such as MyRun, 'curatorial touch should be as light as possible' [24, p.224]. To begin with both researchers and curators were content to be open in the type of contributions submitted by visitors, as long as they were not rude. Yet we saw how the reaction to offensive, playful and some only tangentially related messages was an increased firmness from staff and curators in what was and was not vetted, due to the often overwhelming amount of content that was produced each day. While this may have ensured the platform was more fully integrated into the narrative of the exhibition, it also limited the design in relation to its initial envisioned 'open' use.

A fundamental failure in our design was that we did not consider how visitors themselves could regulate what they considered appropriate or inappropriate contributions and this could be a socially meaningful contribution in and of itself. Future versions of such platforms could incorporate mechanisms for visitors *themselves* to flag contributions as irrelevant or inappropriate and explain why. While this is a core insight, this is not necessarily novel in itself and more a reflection of an oversight in MyRun's design and the real-world constraints we were working with. At the same time, one of the challenges the design process raised was how to develop such approaches within the current curatorial infrastructures of the museum itself, when designing platforms for such a diverse group of visitors and mass participation. We can take this further however to suggest that removal of content should not be based on singular flagging events but *be a result of multiple visitors identifying that a specific contribution is inappropriate or*

not relevant to the topic under discussion. Furthermore, these contributions could then be kept at a 'holding screen' where visitors could still continue to view what was deemed irrelevant and *move these back into the main exhibition if they feel they are still relevant*. This would begin to move us away from existing curatorial traditions to more discursive forms between visitors. This form may be more appropriate for a continually changing, living memory archive, relevant for live cultural events such as The Run that exist within living memory and are constantly repeating and evolving over time.

A further way of reconfiguring visitor participation as it relates to curation would be to pass aspects of the curatorial practice to those who contribute. While we did try to capture additional information alongside contributions (e.g. the year they occurred and location on the route) these were often not completed by visitors. An alternative approach might be rather than having to input further information at the time of contribution, instead asking visitors to *relate and juxtapose* a new contribution to existing content on the platform. Following this, they might move along the exhibit to screens that articulate a different set of questions to the visitor, inviting views on *why certain contributions are related*, or why they are *very different from one-another*. Critically, this view would fit in with our previous points about allowing for time for appropriation and for different paces of participation. Not all of the 'visitor work' would be performed in the moment of contribution. Instead, they would be *guided from contributing, to relating, to dialoguing and vetting*. Importantly, we are not suggesting here that visitors replace the role of the curator. Rather, curators provide a space for visitors to have a more active role in determining what should be displayed and how it may be displayed in relation to others—this additional context may then inform curatorial decisions as to what is displayed on the encompassing displays of contributions at the entrance or exit points of a platform such as MyRun. There are of course time and motivational implications to this approach and how this might be managed at the kinds of scale that can support mass participation and engagement.

6. CONCLUSION

As museums and public knowledge institutions turn to technology to support participation, the temptation is to continue developing interfaces for contribution. Yet it is questionable as to whether all visitors actually wish to be co-constructors of exhibits in the particular ways we designed for as part of MyRun. Our study highlighted how the views of visitors towards cultural organisations are hugely diverse. This was not just in reference to the topic of an exhibit, but also to what the role of museums should be in regards to the content of the exhibit. It should be educational, yet engaging, interactive, yet reflective. While we embraced inclusion and openness in designing MyRun—and indeed this brought great pleasure to many visitors—this was clearly challenging for some, who preferred to browse or disengage. While there are positives to be taken here, there are also open questions about the value that the public place on such participatory exhibitions and future interaction design research that considers such large-scale engagement.

Furthermore, our original emphasis on designing for the visitor experience of contribution was problematised when much of the content was rejected due to its lack of relevance to the running theme. This points to the importance of negotiating familiar and ambiguous interaction around recounting stories, and the role curating, managing and displaying content can play as a critical

consideration for designing participatory platforms in the future. Our platform structured curation on a model combining a randomized selection of content with institutional and visitor curation of content within the exhibition. This was however largely controlled by the museum, who maintained editorial control of what was experienced by others. Designing critical, diverse and more democratic curatorial platforms within the museum that create meaningful dialogues between staff and visitors that question the role of curation could expand contribution mechanisms for such institutions, and should be the focus of future work.

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